

What's Old is New Again: Rainwater Harvesting

Mindy Conyers, PhD, CAIS
2017 Water for Texas Conference

rainwater harvesting

“the capture and storage of rainwater
for subsequent use”



34 Texas Administrative Code §3.318(a)(5)

Why harvest rainwater?

- stormwater management
- water conservation
- superior quality





Photo: wondermondo.com



Photo: Passanna Gunasekera for USAID



Photo: wondermondo.com

Important considerations

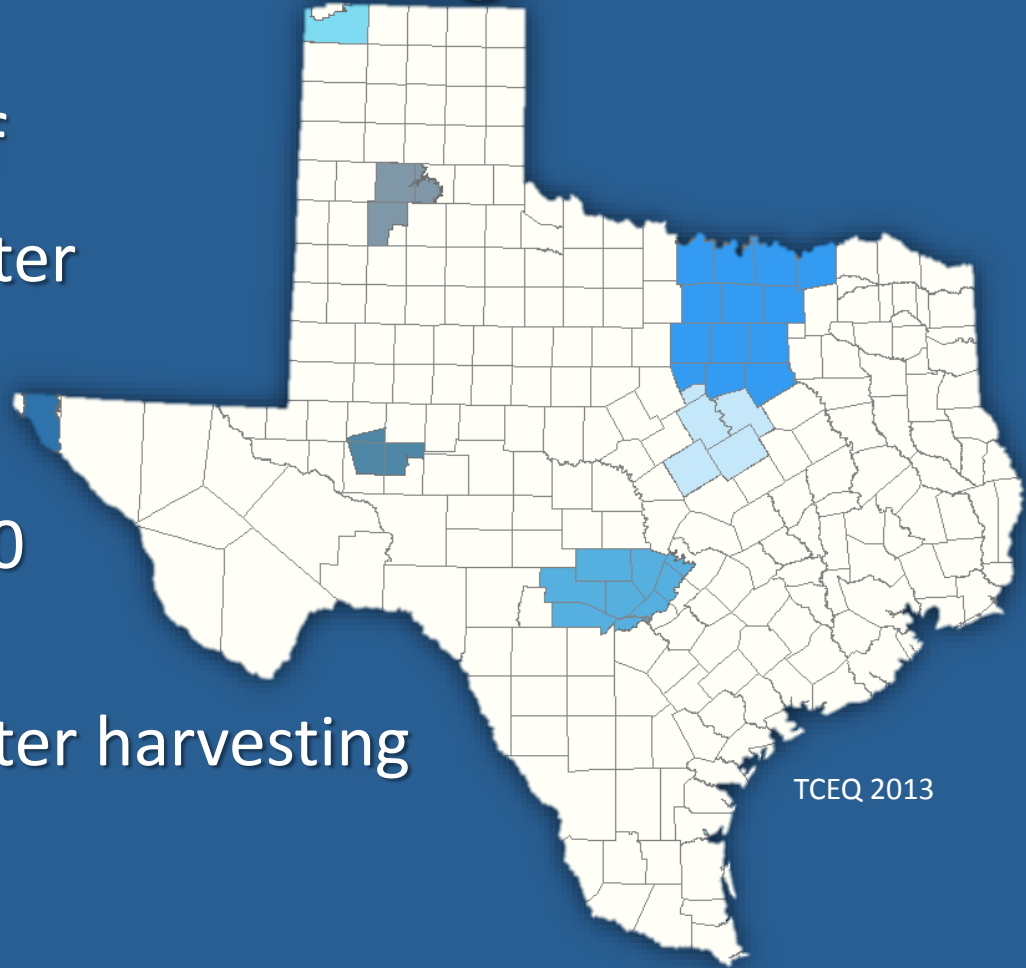
- applicable laws
- supply and demand
- system design



Photo: Texas Legislature Online

Rainwater harvesting laws

- Training required if
 - Priority Groundwater Management Area
 - or
 - population >10,000
 - and
 - permits for rainwater harvesting



Texas Local Government Code §580.004

Statewide support

- school district, municipal, & county facilities
- new state buildings



Photo: Texas Department of Transportation

Texas Local Government Code §580.004

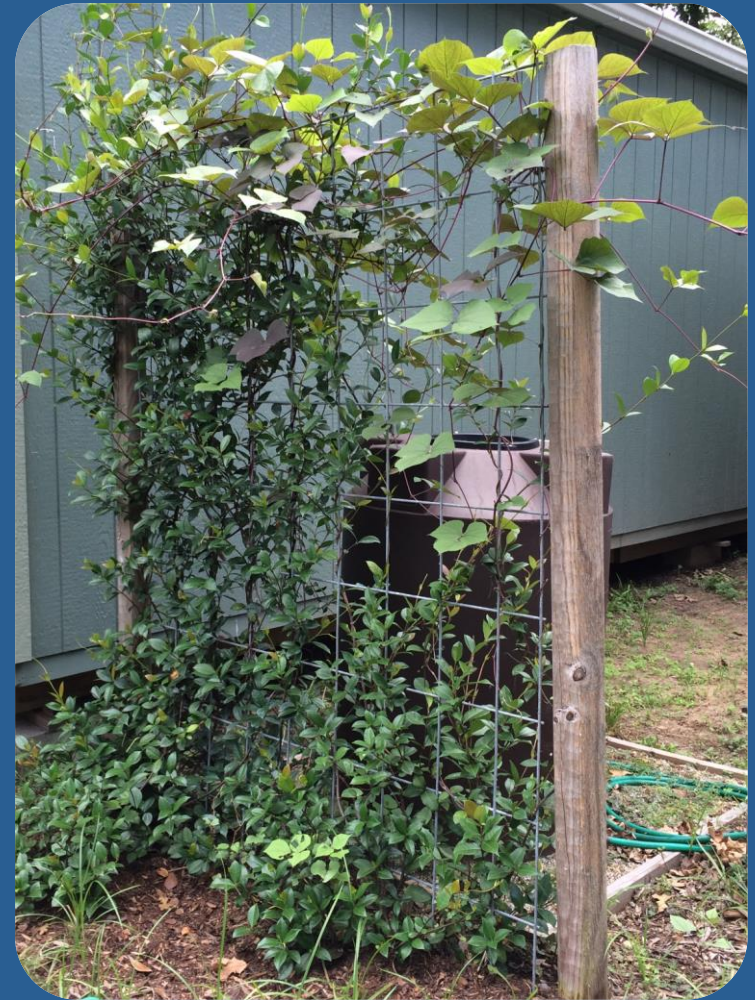
Texas Government Code §447.004

Statewide support

- property owners associations



Photo: Billy Kniffen



Texas Property Code §202.007

Health and safety standards

- cross-connection safeguards



30 Texas Administrative Code §290.44

Health and safety standards

- installation




Photo: Leadership Montgomery County

Texas Health and Safety Code §341.042

Financial incentives

- tax exemptions

 01-339 (Back)
Rev. 4-13/8

[SAVE A COPY](#) [CLEAR SIDE](#)

Texas Sales and Use Tax Exemption Certification

This certificate does not require a number to be valid.

Name of purchaser, firm or agency	
Address (Street & number, P.O. Box or Route number)	Phone (Area code and number)
City, State, ZIP code	

I, the purchaser named above, claim an exemption from payment of sales and use taxes (for the purchase of taxable items described below or on the attached order or invoice) from:

34 Texas Administrative Code §3.318

Tax Code §151.314, §151.315, and §151.355

Texas Constitution, Article 8

Important considerations

- applicable laws
- supply and demand
- system design



Photo: Texas Master Naturalists Rolling Plains Chapter

Supply and demand

- How much water will you need?



Supply and demand

How much can you capture?

- about 600 gallons from a 1000ft² roof per inch of rain



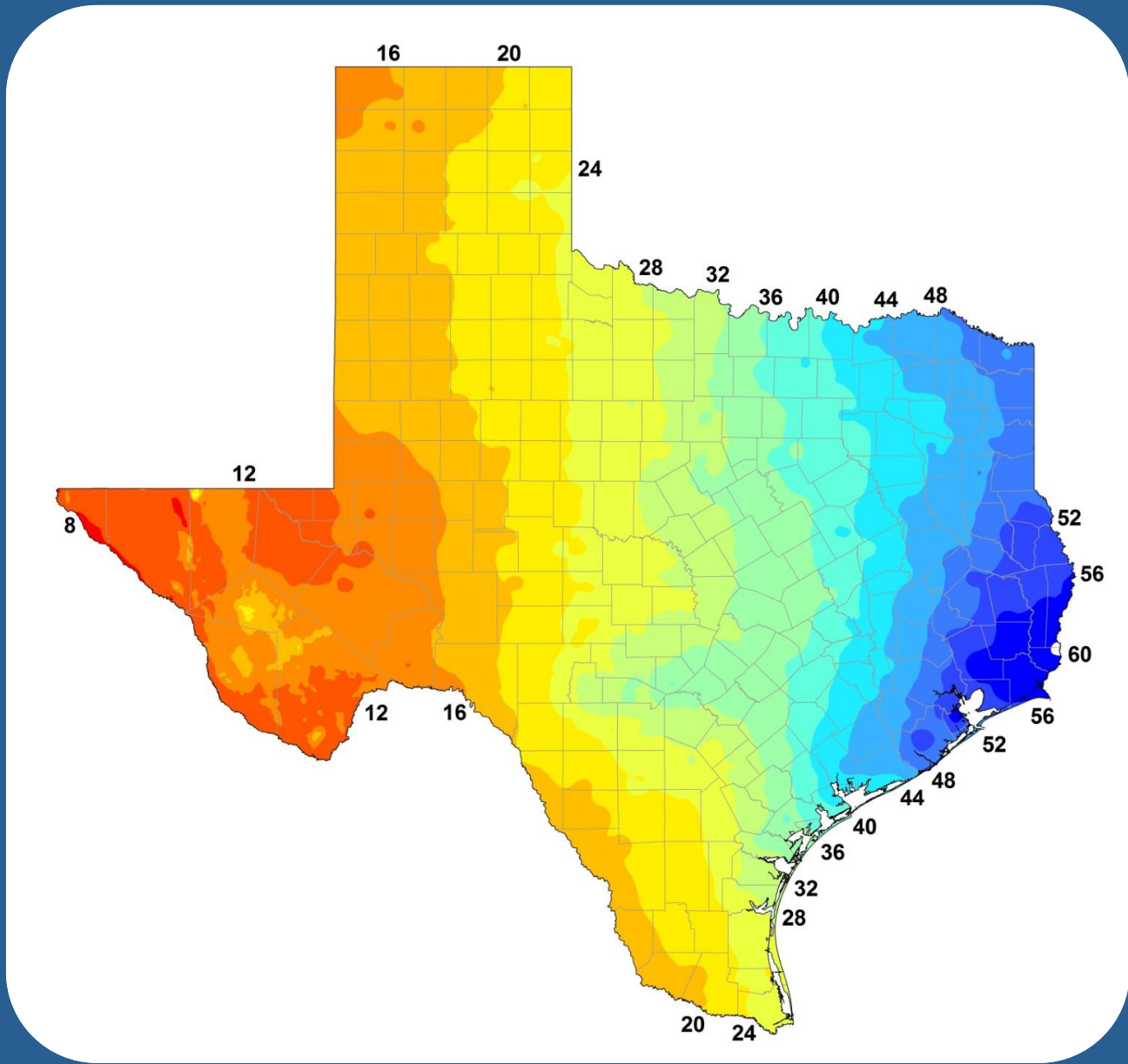
Photo: interestingfactsfun.com

Supply and demand

volume of harvested rainwater {gallons}
= roof area {ft²}
× rainfall {inches}
× collection efficiency {0.85}
× 0.62 {gal/ft²/in of rain}



Photo: Datamath Calculator Museum



Important considerations

- applicable laws
- supply and demand
- system design



Photo: Lady Bird Johnson Wildflower Center

System design

- complexity

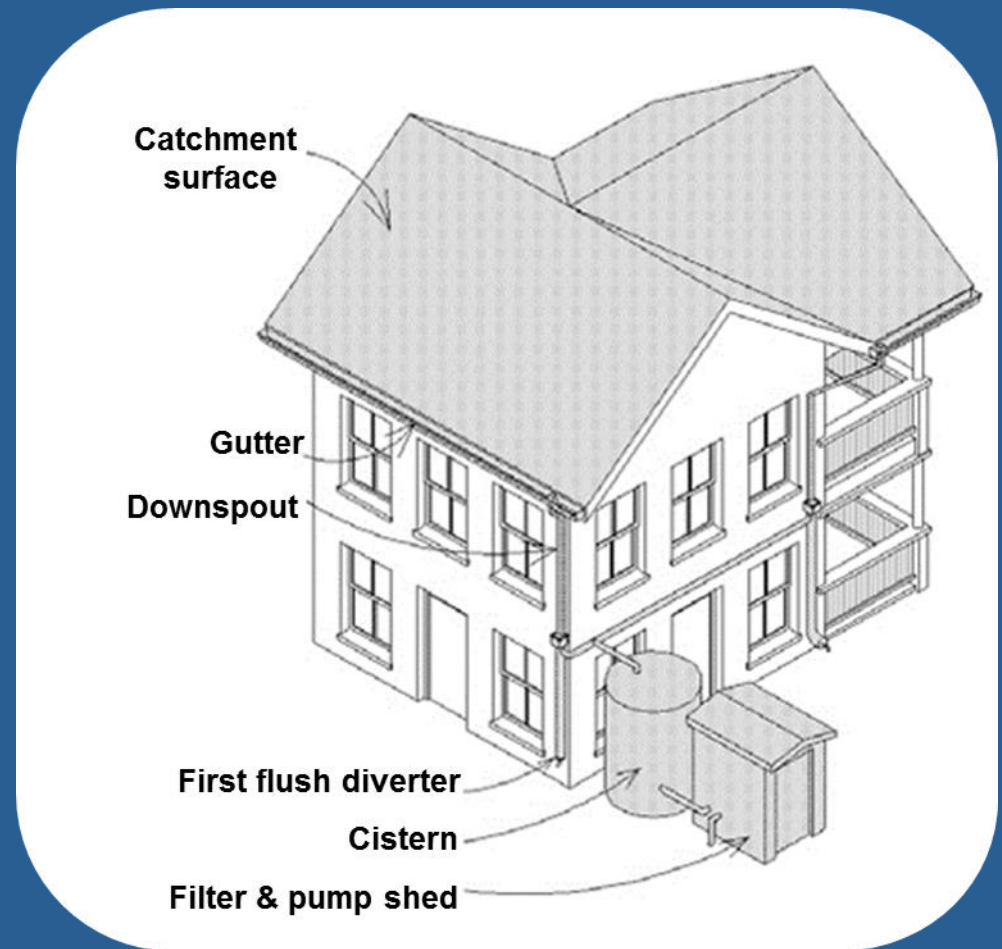




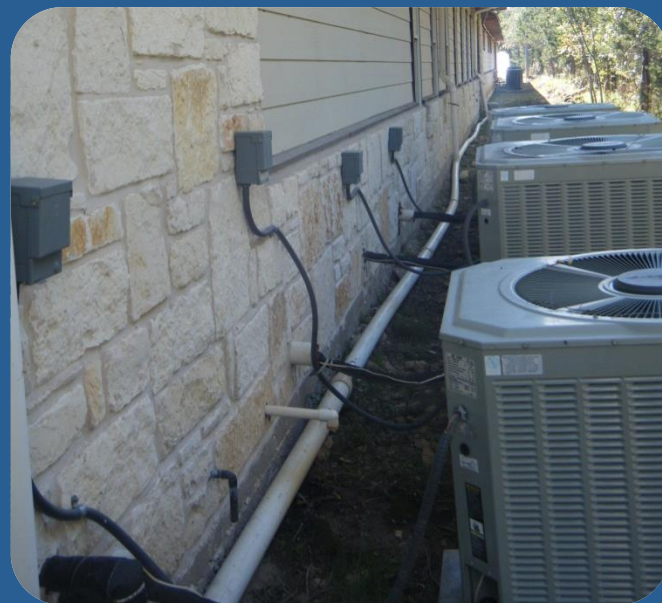
Photo: Pinterest



Photo: Texas A&M University



Photo: Texas A&M University



Design considerations

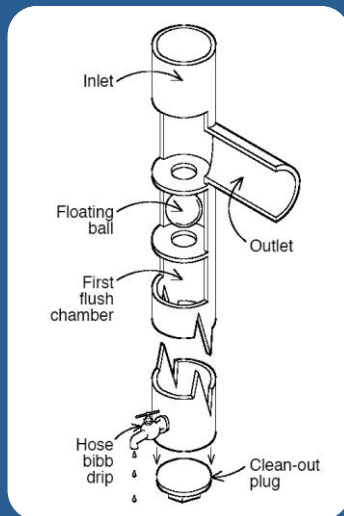
- roof



Photo: Pinterest

Design considerations

- gutters and downspouts



Design considerations

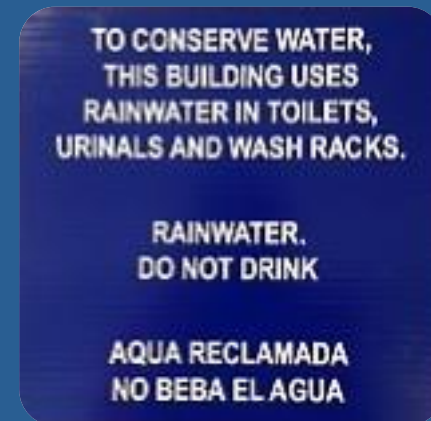
- storage



Photo: rainsaucers.com

Design considerations

- use



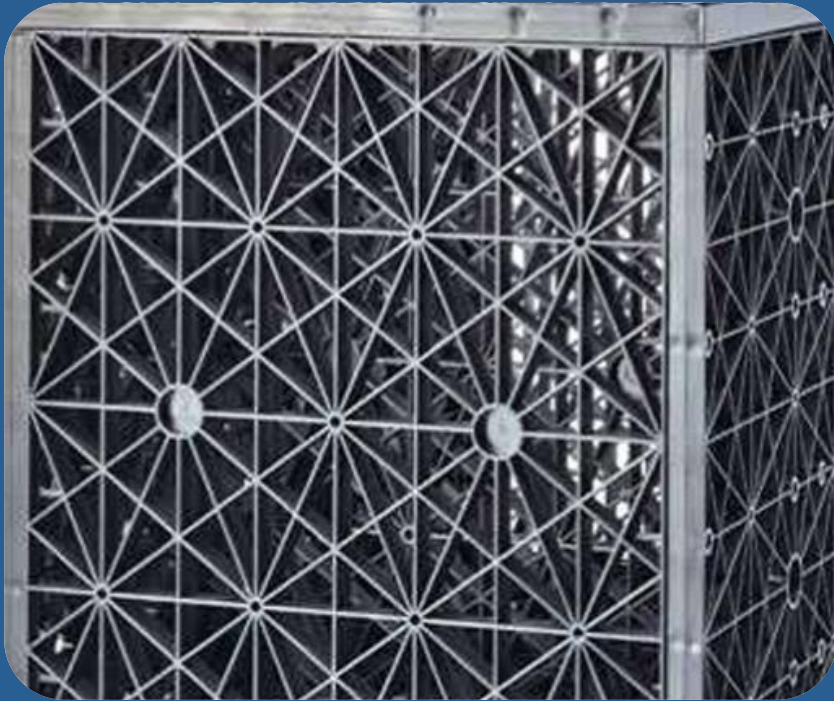


Willow City Fire Department

*80,000 gallons

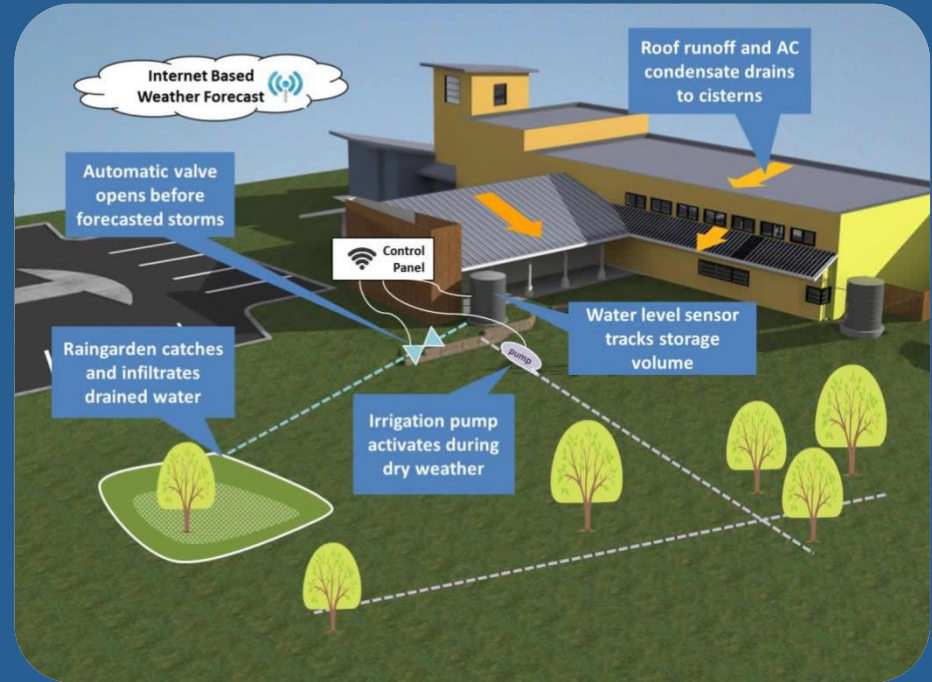


Medical Center, Webster
*175,000 gallons



Texas A&M University, College Station

*37,400 gallons



Twin Oaks Library, Austin
*5,000 gallons

Thank you.



mindy.conyers@twdb.texas.gov
512-463-5102

www.twdb.texas.gov/innovativewater/rainwater